

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended): A printed wiring board comprising ~~an odd number n of~~ conductive layers and n ~~which are built up via a same odd number of~~ insulating layers, wherein said n conductive layers and said n insulating layers are interleaved ~~respectively and~~ wherein the conductive layers are electrically connected to one another via first and second through holes, wherein n is an odd number;

wherein ~~the~~ a first of said conductive layers is a layer on which an electronic component is to be mounted ~~and~~ with leads for electric currents in and out of the electronic component; an n-th one of said conductive ~~layer~~ layers is an external connecting layer for connecting external connecting terminals which conduct electric currents in and out of the printed wiring board; a second to an (n-1)-th ones of said conductive layers are current transmitting layers for transmitting internal currents of the printed wiring board; each of a first to an (n-1)-th ones of said insulating layers, except for the (n+1)/2-th insulating layer, has at least one of the first through holes with a plating film formed on ~~the~~ a wall thereof ~~of the at least one of the through holes~~ to connect the conductive layers; and a surface of the n-th conductive layer is covered with an n-th and outermost one of the insulating layers ~~layer~~ with external connecting terminals being exposed, ~~and wherein a central insulating layer of the odd number of insulating layers prevents warping from occurring in the printing wiring board, wherein the at least one of the through holes of each of said first to (n-1)-th insulating layers except for the central insulating layer is formed using a laser beam wherein a central ((n+1)/2-th) insulating layer has the second through holes, each of the second through holes having a plating film formed on a wall thereof, said plating film extending to the ones of the conductive layers adjacent the central insulating layer and connecting to a first through hole , whereby warping is prevented from occurring in the printed wiring board.~~

2. (Original) The printing wiring board according to Claim 1, wherein the external connecting terminals are solder balls.

3. (Currently amended) A method of manufacturing a printed wiring board having an odd number n of conductive layers ~~which are built up~~ interleaved with a ~~same odd number of n~~ insulating layers ~~respectively~~ and are electrically connected to one another by first, second, and third interconnecting through holes, wherein a central $((n+1)/2$ -th) insulating layer of the odd number of insulating layers has the second through holes, and each of the second through holes has a plating film formed on a wall thereof, said plating film extending to the ones of the conductive layers adjacent the central insulating layer, the method comprising the steps of:

interposing the insulating layers between a second to an n -th conductive layer ~~layers respectively~~ and also forming the first interconnecting through holes for electrically connecting the conductive layers to one another;

laminating a first prepreg and a copper foil on a surface of the second conductive layer, laminating a second prepreg on a surface of the n -th conductive layer, and simultaneously press-bonding the first and second prepregs, the copper foil, the second to n -th conductive layers, and the insulating layers to form a multilayer substrate having ~~an odd number n~~ of insulating layers, wherein the second to n -th conductive layers are internal layers of the multilayer substrate;

etching the copper foil to form a first conductive layer;

forming ~~second~~ the third interconnecting through holes in a first insulating layer ~~using a laser beam~~ and forming connecting holes in an n -th insulating layer, ~~using the laser beam~~ respectively;

forming a metal plating film on the walls of the third interconnecting through holes of the first insulating layer for electrically connecting the first conductive layer with a second conductive layer ~~on the walls of the second interconnecting through holes of the first insulating layer~~; and

connecting external connecting terminals to a surface of the n -th conductive layer exposed through the first connecting through holes of the n -th insulating layer.

4. (Currently amended) A printed wiring board comprising an internal insulating substrate having a conductor circuit formed on a surface thereof, an internal insulating layer laminated on the surface of the internal insulating substrate, and an external insulating layer laminated on a surface of the internal insulating layer, the internal insulating layer and the external insulating layer having an internal conductor circuit and an external conductor circuit, respectively;

wherein the internal insulating layer ~~comprising~~ comprises two or more internal insulating layers of glass cloth-reinforced prepreg containing 30 to 70 % by weight of glass cloth, and wherein the external insulating layer comprises synthetic resins and inorganic fillers ~~or synthetic resin single substances~~, and wherein the external insulating layer has at least one through hole with a plating film formed on a wall of the at least one through hole, ~~wherein the at least one through hole is formed using a laser beam.~~

5-6. (Cancelled)

7. (Currently amended) A method of manufacturing a printed wiring board having a plurality of conductive layers which are ~~built-up via~~ interleaved with insulating layers, respectively, and are electrically connected to one another by interconnecting through holes, the method comprising the steps of:

forming conductive layers on a plurality of insulating layers ~~respectively~~, wherein each of the insulating layers is formed of one of ~~selected from a group comprising resin base materials containing synthetic resin single substance,~~ resin base materials containing synthetic resins and inorganic fillers and cloth base materials containing synthetic resins and inorganic cloth;

laminating and press-bonding the resulting insulating layers to form a multilayer substrate;

irradiating a laser beam on the multilayer substrate at interconnecting through hole-forming portions to define interconnecting through holes through the insulating layers with bottoms defined by the conductive layers;

covering the walls of the interconnecting through holes with metal plating films;
and
fusing solder balls against the interconnecting through holes; and
filling ~~them~~ the interconnecting through holes with solder.

8-9. (Cancelled)

10. (Previously presented) The method of manufacturing a printed wiring board according to any of Claim 7, wherein the insulating layers are flexible films made of a glass fiber-reinforced resin.

11-14. (Cancelled)

15. (Currently amended) A printed wiring board comprising:
an insulating substrate having at least one interconnecting through hole penetrating the insulating substrate and having a first opening and a second opening ~~formed using a laser beam~~;

an annular pad disposed along a peripheral edge of a the first opening of the interconnecting through hole so as not to cover the first opening;

a covering pad covering a the second opening of the interconnecting through hole;

a conductor circuit ~~connected to~~ connecting an electronic component with the covering pad;

a metal plating film electrically connecting the annular pad and the covering pad, the metal plating film covering a wall of the interconnecting through hole and the bottom of the interconnecting through hole defined by the covering pad such that the metal plating film has a flat surface at the wall and the bottom of the interconnecting through hole; and

a solder ball for external connection bonded ~~on a surface of~~ to the annular pad at a position offset from the interconnecting through hole.

16-17. (Cancelled)

18. (Previously presented) The printed wiring board according to claim 15, wherein the surface of the insulating substrate is covered with a solder resist.

19. (Cancelled)

20. (Cancelled)

21. (Previously Presented) The printed wiring board according to claim 1, wherein each of the insulating layers is formed of one of ~~selected from a group comprising~~ epoxy resins, phenol resins, polyimide resins, polybutadiene resins, and fluororesins.

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Previously Presented) The method according to claim 3, wherein each of the insulating layers is formed of one of ~~selected from a group comprising~~ epoxy resins, phenol resins, polyimide resins, polybutadiene resins, and fluororesins.

26. (Previously Presented) The method according to claim 7, wherein the inorganic fillers are formed of one of ~~selected from a group comprising~~ glass short fibers, silica, mica, alumina, and carbon.

27. (Previously Presented) The method according to claim 7, wherein the cloth base materials are formed of one of ~~selected from a group comprising~~ glass-fiber cloth, carbon cloth, and aramid cloth.

28. (Previously Presented) The printed wiring board according to claim 15, wherein the solder ball is located in alignment with ~~the central axis of the~~ interconnecting through hole.

29. (Previously Presented) The printed wiring board according to claim 15, wherein the solder ball is located at a position offset from the interconnecting through hole.

30. (Cancelled)

31. (Cancelled)